

Appl. No. 10/802,291
Amdt. dated November 8, 2004
Reply to Office action dated August 11, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1- 14 (canceled)

Claim 15 (new): A wind energy extraction device, comprising:
an impellor and associated power converter for the impellor;
concentrator wings disposed about the impellor, the concentrator wings being spaced apart to permit air flow between the concentrator wings;
the impellor being positioned in relation to the concentrator wings to be driven in use by a flow of wind induced by the air flow between the concentrator wings; and
a flow regulator positioned downstream of the impellor, the flow regulator having wind deflecting aerodynamic surfaces that are contoured to enhance laminar flow of the air flow between the concentrator wings.

Claim 16 (new): The wind energy extraction device of claim 15 in which the impellor is disposed within a turbine shroud.

Claim 17 (new): The wind energy extraction device of claim 15 in which the concentrator wings are concentrically disposed to each other about a central axis.

Claim 18 (new): The wind energy extraction device of claim 15 in which the impellor is located on the central axis.

Claim 19 (new): The wind energy extraction device of claim 16 further comprising an aerobrake arranged such that the proximity of the turbine shroud to the flow regulator may be

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adjusted depending on wind conditions.

Claim 20 (new): The wind energy extraction device of claim 19 wherein the power converter is installed on the downwind side of the aerodynamic surfaces of the flow regulator; and further comprising an impellor driveshaft connecting the impellor to the power converter, the impellor driveshaft extending out of the flow regulator and positioning the impellor within the flow of wind passing through the turbine shroud.

Claim 21 (new): The wind energy extraction device of claim 20 further comprising a downwind guide for supporting a plurality of elements, the downwind guide presenting little obstruction to the higher speed wind flow upstream of the plurality of elements, the downwind guide facilitating orientation of the plurality of elements approximately into the oncoming wind and the downwind guide comprising a lee support that supports the plurality of elements and extends in a downwind direction then turns outward from the central axis and connects with a swivel that allows the plurality of elements to rotate around a common axis and effect the orientation.

Claim 22 (new): The wind energy extraction device of claim 16 further wherein the power converter is installed on the downwind side of the aerodynamic surfaces of the flow regulator; and further comprising an impellor driveshaft connecting the impellor to the power converter, the impellor driveshaft extending out of the flow regulator and positioning the impellor within the flow of wind passing through the turbine shroud.

Claim 23 (new): The wind energy extraction device of claim 22 further comprising a downwind guide for supporting a plurality of elements, the downwind guide presenting little obstruction to the higher speed wind flow upstream of the plurality of elements, the downwind guide facilitating orientation of the plurality of elements approximately into the oncoming wind and the downwind guide comprising a lee support that supports the plurality of elements and

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extends in a downwind direction then turns outward from the central axis and connects with a swivel that allows the plurality of elements to rotate around a common axis and effect the orientation.

Claim 24 (new): The wind energy extraction device of claim 15 further comprising a downwind guide for supporting a plurality of elements, the downwind guide presenting little obstruction to the higher speed wind flow upstream of the plurality of elements, the downwind guide facilitating orientation of the plurality of elements approximately into the oncoming wind and the downwind guide comprising a lee support that supports the plurality of elements and extends in a downwind direction then turns outward from the central axis and connects with a swivel that allows the plurality of elements to rotate around a common axis and effect the orientation.

Claim 25 (new): A method for extracting energy from wind, the method comprising the steps of:

driving an impellor using a flow of wind induced by air flow between concentrator wings, the impellor being connected to a power converter; and

deflecting the flow of wind using aerodynamic surfaces of a flow regulator to enhance laminar flow of the air flow between the concentrator wings and thereby reduce aerodynamic stalling of one or more of the concentrator wings.

Claim 26 (new): The method of claim 25 in which the impellor is disposed within a turbine shroud.

Claim 27 (new): The method of claim 26 further comprising adjusting the proximity of the turbine shroud to the flow regulator according to wind conditions.

Claim 28 (new) The method of claim 27 in which adjusting the proximity of the turbine

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shroud to the flow regulator comprises reducing the proximity in high wind condition to impede or restrict the the flow of wind through the turbine shroud.

Claim 29 (new): The method of claim 28 in which the power converter is located coaxially with the impellor and downwind of the flow regulator.

Claim 30 (new): The method of claim 25 further comprising the concentrator wings being pivotally mounted to allow the concentrator wings to align with wind direction.

Claim 31 (new): The method of claim 30 in which the concentrator wings are pivotally mounted on a swivel connected to the concentrator wings by a lee support.

Claim 32 (new): The method of claim 25 in which the power converter is located coaxially with the impellor and downwind of the flow regulator.